IN THE CLAIMS

Please cancel Claims 1-5 without prejudice or disclaimer.

Claims 1-5 (cancelled)

Claim 6 (currently amended): A circuit, comprising:

a power dissipating device arranged between a source and a load, the device being operative to generate a temperature difference between a relatively cold peripheral area of the device and a relatively warm central area of the device, the temperature difference having a known relationship to electrical operating conditions of the device;

a Seebeck effect thermoelectric sensor integrally formed with the device, the sensor having ~~one or more~~ no warm junctions at the ~~central~~ peripheral area of the device and ~~one or more~~ cold junctions ~~at the peripheral area of the device~~, the sensor being operative to generate an electrical output signal having a known relationship to the temperature difference between the peripheral and central areas of the device so as to provide an indication of the electrical operating conditions of the device; and

circuitry operative in response to the electrical output signal of the sensor to modify the operation of the circuit in a corresponding predetermined fashion.

Claim 7 (original): A circuit according to claim 6, wherein the temperature difference from which the sensor generates the electrical output signal is substantially independent of an average temperature common to both the warm and cold junctions, and wherein the electrical output signal is used by the operation-modifying circuitry without any qualification as to absolute temperature.

Claim 8 (original): A circuit according to claim 6, further comprising additional temperature sensing circuitry operative to provide an indication of an absolute temperature in a region near the power dissipating device, and wherein the

operation-modifying circuitry is operative to qualify the electrical output signal from the sensor with the indication from the additional temperature sensing circuitry.

Claim 9 (original): A circuit according to claim 8, wherein the qualification of the sensor output signal by the operation-modifying circuitry includes the logical OR-ing of the sensor output signal with the indication from the additional temperature sensing circuitry.

Claim 10 (original): A circuit according to claim 8, wherein the qualification of the sensor output signal by the operation-modifying circuitry includes (1) comparing the sensor output signal with a variable threshold value, and (2) decreasing the threshold value as the temperature in the region near the device increases as indicated by the additional temperature sensing circuitry.

Claim 11 (original): A circuit according to claim 6, wherein the power dissipating device is a power MOSFET.

Claim 12 (original): A circuit according to claim 6, wherein the operation-modifying circuitry is thermal protection circuitry operative to effect a shutdown of the power-dissipating device when the electrical output signal from the sensor indicates that the power dissipation of the power-dissipating device is approaching a predetermined acceptable maximum value.

Please add the Claims 13-26 as follows:

Claim 13 (new): A circuit, comprising:

a power dissipating device arranged between a source and a load, the device being operative to generate a temperature difference between a relatively cold peripheral area of the device and a relatively warm central area of the device, the temperature difference having a known relationship to electrical operating conditions of the device;

a Seebeck effect thermoelectric sensor integrally formed with the device, the sensor having no warm junctions at the peripheral area of the device and no cold junctions at the central area of the device, the sensor being operative to generate an electrical output signal having a known relationship to the temperature difference between the peripheral and central areas of the device so as to provide an indication of the electrical operating conditions of the device; and

circuitry operative in response to the electrical output signal of the sensor to modify the operation of the circuit in a corresponding predetermined fashion.

Claim 14 (new): A circuit according to claim 6, wherein the temperature difference from which the sensor generates the electrical output signal is substantially independent of an average temperature common to both the warm and cold junctions, and wherein the electrical output signal is used by the operation-modifying circuitry without any qualification as to absolute temperature.

Claim 15 (new): A circuit according to claim 6, further comprising additional temperature sensing circuitry operative to provide an indication of an absolute temperature in a region near the power dissipating device, and wherein the operation-modifying circuitry is operative to qualify the electrical output signal from the sensor with the indication from the additional temperature sensing circuitry.

Claim 16 (new): A circuit according to claim 8, wherein the qualification of the sensor output signal by the operation-modifying circuitry includes the logical OR-ing of the sensor output signal with the indication from the additional temperature sensing circuitry.

Claim 17 (new): A circuit according to claim 8, wherein the qualification of the sensor output signal by the operation-modifying circuitry includes (1) comparing the sensor output signal with a variable threshold value, and (2) decreasing the threshold value as the temperature in the region near the device increases as indicated by the additional temperature sensing circuitry.

Claim 18 (new): A circuit according to claim 6, wherein the power dissipating device is a power MOSFET.

Claim 19 (new): A circuit according to claim 6, wherein the operation-modifying circuitry is thermal protection circuitry operative to effect a shutdown of the power-dissipating device when the electrical output signal from the sensor indicates that the power dissipation of the power-dissipating device is approaching a predetermined acceptable maximum value.

Claim 20 (new): A circuit, comprising:

a power dissipating device arranged between a source and a load, the device being operative to generate a temperature difference between a relatively cold peripheral area of the device and a relatively warm central area of the device, the temperature difference having a known relationship to electrical operating conditions of the device;

a Seebeck effect thermoelectric sensor integrally formed with the device, the sensor having warm junctions and no cold junctions at the peripheral area of the device, the sensor being operative to generate an electrical output signal having a known relationship to the temperature difference between the peripheral and central areas of the device so as to provide an indication of the electrical operating conditions of the device; and

circuitry operative in response to the electrical output signal of the sensor to modify the operation of the circuit in a corresponding predetermined fashion.

Claim 21 (new): A circuit according to claim 6, wherein the temperature difference from which the sensor generates the electrical output signal is substantially independent of an average temperature common to both the warm and cold junctions, and wherein the electrical output signal is used by the operation-modifying circuitry without any qualification as to absolute temperature.

Claim 22 (new): A circuit according to claim 6, further comprising additional temperature sensing circuitry operative to provide an indication of an absolute temperature in a region near the power dissipating device, and wherein the operation-modifying circuitry is operative to qualify the electrical output signal from the sensor with the indication from the additional temperature sensing circuitry.

Claim 23 (new): A circuit according to claim 8, wherein the qualification of the sensor output signal by the operation-modifying circuitry includes the logical OR-ing of the sensor output signal with the indication from the additional temperature sensing circuitry.

Claim 24 (new): A circuit according to claim 8, wherein the qualification of the sensor output signal by the operation-modifying circuitry includes (1) comparing the sensor output signal with a variable threshold value, and (2) decreasing the threshold value as the temperature in the region near the device increases as indicated by the additional temperature sensing circuitry.

Claim 25 (new): A circuit according to claim 6, wherein the power dissipating device is a power MOSFET.

Claim 26 (new): A circuit according to claim 6, wherein the operation-modifying circuitry is thermal protection circuitry operative to effect a shutdown of the power-dissipating device when the electrical output signal from the sensor indicates that the power dissipation of the power-dissipating device is approaching a predetermined acceptable maximum value.